

WHAT IS CLAIMED IS:

1. A vehicle occupant sensing system comprising:

a low profile sensor assembly having a housing that includes a base, an upper slide member, and at least one intermediate guide member disposed between said upper slide member and said base, said upper slide member and said at least one intermediate guide member supported for movement toward and away from said base; and

a sensor operatively fixed relative to at least one of said upper slide member and said base and operable to detect movement of said upper slide member toward and away from said base.

2. A vehicle occupant sensing system as set forth in claim 1 wherein said at least one intermediate guide member includes a lower flange and said base includes an upper flange, said upper flange on said base and said lower flange on said at least one intermediate guide member cooperating to define the limit of movement of said at least one intermediate guide member away from said base.

3. A vehicle occupant sensing system as set forth in claim 2 wherein said base defines an inner guide surface, said lower flange of said at least one intermediate guide member cooperating with said inner guide surface of said base to facilitate movement of said at least one intermediate guide member relative to said base in a substantially axial direction.

4. A vehicle occupant sensing system as set forth in claim 2 wherein said base includes an outer step which is adapted to accept said lower flange of said at least one intermediate guide member when said at least one intermediate guide member moves toward said base and defines the axial limit of travel of said at least one intermediate guide member toward said base.

5. A vehicle occupant sensing system as set forth in claim 1 wherein said upper slide member includes a lower flange and said at least one intermediate guide member includes an upper flange, said upper flange of said at least one intermediate guide member and said lower flange of said upper slide member cooperating to define the limit of movement of said upper slide member away from said base.

6. A vehicle occupant sensing system as set forth in claim 5 wherein said at least one intermediate guide member defines an inner guide surface, said lower flange of said upper slide member cooperating with said inner guide surface of said at least one intermediate guide member to facilitate axial movement of said upper slide member relative to said base.

7. A vehicle occupant sensing system as set forth in claim 5 wherein said base includes an inner platform that is adapted to accept said lower flange of said upper slide member when said upper slide member moves toward said base and defines the axial limit of travel of said upper slide member toward said base.

8. A vehicle occupant sensing system as set forth in claim 1 wherein said assembly further includes a biasing member adapted to bias said upper slide member and said at least one intermediate guide member away from said base.

9. A vehicle occupant sensing system as set forth in claim 8 wherein said biasing member includes a coiled spring operatively disposed between said base and said upper slide member.

10. A vehicle occupant sensing system as set forth in claim 1 wherein said sensor is operable to detect the change in the strength of magnetic flux as a function of movement of said upper slide member relative to said base.

11. A vehicle occupant sensing system as set forth in claim 1 wherein said upper slide member includes a retainer extending in the general direction of said base, said base defining a receptacle that is aligned with said retainer and adapted to accept said retainer when said upper slide member has moved toward said base.

12. A vehicle occupant sensing system comprising:
a low profile sensor assembly having a housing that includes a base and an upper slide member with a lower flange and a retainer, said upper slide member supported for movement toward and away from said base, wherein said base includes an outer step, the outer step adapted to accept said lower flange of said upper slide member when said upper slide member has moved toward said base, and wherein said base includes a receptacle, the

receptacle adapted to accept the retainer when said upper slide member has moved toward said base; and

a sensor operatively fixed relative to at least one of said upper slide member and said base and operable to detect movement of said upper slide member toward and away from said base.

13. A vehicle occupant sensing system as set forth in claim 12 wherein said base defines an inner guide surface, said lower flange of said upper slide member cooperating with said inner guide surface of said base to facilitate movement of said upper slide member relative to said base in a substantially axial direction.

14. A vehicle occupant sensing system as set forth in claim 12 wherein at least one of said base and upper slide member includes a plurality of ridges and at least one of said base and upper slide member includes a plurality of grooves, wherein said grooves are adapted to receive said ridges to thereby inhibit rotation of said upper slide member relative to said base.

15. A vehicle occupant sensing system as set forth in claim 12 wherein said assembly further includes a coiled spring extending between said base and said upper slide member, said coiled spring acting to bias said upper slide away from said base.

16. A vehicle seat assembly comprising:

a lower seat cushion defining an upper surface and a lower surface spaced from said upper surface;

a vehicle occupant sensing system having a plurality of low profile sensor assemblies, each of said low profile sensor assemblies disposed below said lower seat cushion adjacent said lower surface, said low profile sensor assemblies each including a housing having a base, an upper slide member, and at least one intermediate guide member disposed between said upper slide member and said base, said upper slide member and said at least one intermediate guide member supported for movement toward and away from said base and being responsive to movement of said upper surface of said lower seat cushion toward said lower surface of said seat cushion thereby responding to the presence of an occupant in said vehicle seat; and

a sensor operatively fixed relative to at least one of said upper slide member and said base and operable to detect movement of said upper slide member toward and away from said base in response to the presence of an occupant in said vehicle seat.

17. A vehicle seat assembly as set forth in claim 16 wherein said at least one intermediate guide member includes a lower flange and said base includes an upper flange, said upper flange on said base and said lower flange on said at least one intermediate guide member cooperating to define the limit of movement of said at least one intermediate guide member away from said base.

18. A vehicle seat assembly as set forth in claim 16 wherein said upper slide member includes a lower flange and said at least one intermediate guide member includes an

upper flange, said upper flange of said at least one intermediate guide member and said lower flange of said upper slide member cooperating to define the limit of movement of said upper slide member away from said base.

19. A vehicle seat assembly as set forth in claim 16 wherein said at least one intermediate guide member includes a lower flange and said base includes an outer step which is adapted to accept said lower flange of said at least one intermediate guide member when said at least one intermediate guide member moves toward said base.

20. A vehicle seat assembly as set forth in claim 16 wherein said upper slide member includes a retainer and said base includes a receptacle adapted to accept said retainer of said upper slide member when said upper slide member moves toward said base.